

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF VIRGINIA
ROANOKE DIVISION**

JEFFREY S. HODGES, <i>et al.</i>,)	
)	
)	
Plaintiffs,)	Civil Action No.: 7:12cv00362
)	
v.)	
)	
FEDERAL-MOGUL)	By: Hon. Michael F. Urbanski
CORPORATION, <i>et al.</i>,)	United States District Judge
)	
)	
Defendants.)	

MEMORANDUM OPINION

Plaintiffs brought this products liability and negligence action for serious burn injuries sustained in an industrial accident at an automotive ball-bearing plant in Blacksburg, Virginia. The matter is currently before the court on defendants' motions to exclude the testimony of plaintiffs' expert witnesses and on the defendants' motions for summary judgment. (Dkt. Nos. 75, 76, 79, 81, 84, 85, 87).¹ For the reasons stated herein, the court will grant the motions to exclude plaintiffs' experts and grant defendants' motions for summary judgment.

I.

The factory where the accident occurred is owned by defendant Federal-Mogul, where it employs a manufacturing process bonding aluminum to steel. Aluminum dust, which is highly combustible, is created as a byproduct. In order to remove this potentially dangerous dust from

¹ Specifically, defendant Federal-Mogul Corporation ("Federal-Mogul") has moved to exclude plaintiffs' experts and for summary judgment, (Dkt. Nos. 79 & 75 respectively); defendants Q-Tech Equipment & Services of the Carolinas, L.L.C., Carrington Engineering Sales Co., and Carrington Engineering Sales (collectively "Carrington") have likewise moved to exclude plaintiffs' experts and for summary judgment, (Dkt. Nos. 85 & 87 respectively); defendant Dustex Corporation ("Dustex") has also moved to exclude plaintiffs' experts and for summary judgment, (Dkt. No. 76 & 81 respectively); and finally, defendants Kirk & Blum Manufacturing Company and K&B Duct (collectively "Kirk & Blum") have moved for summary judgment (Dkt. No. 84).

the plant, Federal-Mogul worked with defendant Carrington, a manufacturer's representative, to design² and install a dust collection system. Carrington served as a liaison between Federal-Mogul and two other companies: defendants Dustex and Kirk & Blum. A dust collection system was installed in 2003 to remove the aluminum dust from the plant. The system utilizes fans and ductwork to move the dust outside of the factory into an exterior dust collector called a "baghouse." The baghouse was designed by Dustex. Inside the ductwork, just beyond the exterior wall of the plant, was a "back-blast damper." Plaintiffs assert that the purpose of the damper was to stop an explosion or conflagration occurring in the baghouse from propagating through the ductwork and into the plant. The damper was designed by Kirk & Blum.³

Plaintiffs Jeffrey S. Hodges, Tommy Lee Bonds, and John Paul Spangler are employed by non-party LCM Corporation ("LCM"), a company in the business of hazardous waste removal. Plaintiffs themselves are trained and certified in hazardous waste removal. In 2010, Federal-Mogul hired LCM to inspect for and, if necessary, clean up any aluminum dust in the plant's ductwork system. The inspection began on December 30, 2010. LCM determined that all of the ducts were clean, save one, which had a buildup of three to five inches of dust inside it. LCM returned the next day to clean the dust out of this duct. While inside the plant and performing their duties for LCM cleaning the ductwork on December 31, 2010, plaintiffs were burned by fire emanating from the ductwork. The exterior baghouse also exploded.

Plaintiffs contend that the source of the fire was the exterior baghouse and "[a]s a result, a deflagration or flame front exited the baghouse where the explosion initiated, and propagated past the flash protector [i.e. damper] that should have stopped it and continued through the

² Carrington denies any involvement in the design process.

³ Kirk & Blum asserts that the damper was not intended to serve as a fire or explosion containment device, but was intended merely to prevent the backflow of air from the baghouse into the plant.

external wall of the plant facility and into the ductwork internal to the plant where the plaintiffs were involved in the cleaning operation.” (Compl., Dkt. No. 1, at 5). Plaintiffs assert that “[t]he explosion and its progression from the baghouse outside the plant propagating to the interior of the plant was captured by surveillance video.” Id. Additionally, plaintiff Jeffrey S. Hodges testified at his deposition that he witnessed the explosion emanate from the baghouse and travel towards him through the ductwork. Plaintiffs’ experts have expressed the opinion that (1) the explosion originated in the baghouse; and (2) the explosion was caused by an exothermic reaction resulting from the interaction of aluminum dust and condensation.

Defendants have a different theory of cause and origin. Defendants assert that plaintiffs themselves caused the ignition of the aluminum dust and resulting fire and explosion by vacuuming up the highly combustible aluminum dust with an industrial vacuum that was (1) not grounded and (2) had a PVC pipe extension duct-taped to the end of it. Defendants argue that the resultant static electricity was the obvious source of ignition and that the deflagration spread both out the open ductwork and inside the plant, where it ignited the tyvek suits worn by the plaintiffs, and down the opposite direction through the ductwork into the exterior baghouse which, consequently, exploded. Defendants emphasize that the explosion occurred shortly after plaintiffs began utilizing the PVC pipe, and that plaintiffs’ own testimony establishes the presence of static electricity in the ductwork.⁴

⁴ Both plaintiffs Hodges and Bonds, the LCM employees who were on a scissor lift handling the vacuum hose when the accident occurred, testified that they felt static electricity while vacuuming before Hodges saw the fireball. Hodges testified:

Q: In the few minutes leading up, you have the pipe in there, did you feel any static electricity?

A: Yes

Q: Did it sting you?

Defendants assert that plaintiffs' experts' opinions on origin and cause should be excluded as unreliable pursuant to Federal Rule of Evidence 702. As such, Federal-Mogul, Carrington, and Dustex have moved to exclude plaintiffs' experts. All defendants have moved for summary judgment. Plaintiffs oppose these motions.

II.

In order to determine whether there is evidence sufficient to create a triable jury issue, the court must first decide the pending motions to exclude the testimony of plaintiffs' experts.

Expert testimony is governed by Federal Rule of Evidence 702 ("Rule 702"), which states that:

A witness who is qualified⁵ as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

A: I don't know about the term sting or bite or whatever, but you feel it.

(Hodges Dep., Dkt. No. 107-8, at 167:6-18). Bonds testified the same:

Q: While you were [vacuuming] did you encounter any of those static electricity bites?

A: Yes.

Q: And how would you describe that?

A: It hurts.

Q: So, you could feel that shock as you were holding the flex hose?

A: Yes, sir.

Q: Did you say anything to Hodges or Spangler about that static electricity charge?

A: No, they knew it.

(Bonds Dep., Dkt. No. 107-9, at 102:12-22).

⁵ For the purposes of the opinion, the court assumes without deciding that plaintiffs' proffered experts are qualified to render the opinions they have provided.

- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case

Fed. R. Evid. 702. “Rule 702 was intended to liberalize the introduction of relevant expert evidence.” Bombardiere v. Schlumberger Tech. Corp., 934 F. Supp. 2d 843, 845 (N.D.W. Va. 2013) (quoting Westberry v. Gislaved Gummi AB, 178 F.3d 257, 261 (4th Cir. 1999)).

Nevertheless, in order to be admissible under Rule 702, an expert opinion must be both relevant and reliable. PBM Products, LLC v. Mead Johnson & Co., 639 F.3d 111, 123 (4th Cir. 2011) (citing Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579, 597 (1993)). In assessing whether proffered expert opinion evidence is sufficiently relevant and reliable, the court acts as a gatekeeper. United States v. Moreland, 437 F.3d 424, 431 (4th Cir. 2006) (citing Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141 (1999)). Here, there is no issue as to relevancy of the expert opinions. The question is whether those opinions are sufficiently reliable.

Determining the reliability of an expert opinion is a flexible inquiry, one which will necessarily depend on both the nature of the proffered opinion and the context in which it is offered. See United States v. Hassan, No. 12-4067, 2014 WL 406768, at *19 (4th Cir. Feb. 4, 2014) (observing that the Daubert test is flexible); see also Pugh v. Louisville Ladder, Inc., 361 F. App'x 448, 452 (4th Cir. 2010) (unpublished) (citing United States v. Wilson, 484 F.3d 267, 274 (4th Cir. 2007)) (noting there is no mechanistic test for determining the reliability of an expert’s proffered testimony); Westberry, 178 F.3d at 260 (4th Cir. 1999) (citations omitted) (noting both the flexible nature of the reliability inquiry and the fact that the particular factors applicable in a given case will depend upon the unique circumstances of the expert testimony

involved). Indeed, although the Supreme Court in Daubert listed several factors that may be used in evaluating the reliability of proposed expert testimony, ultimately “Daubert’s list of specific factors neither necessarily nor exclusively applies to all experts or in every case.” Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137, 141 (1999).

In the context of cause and origin opinions as to fires and explosions, courts have turned to National Fire Prevention Association (NFPA) 921 methodology for guidance in determining the reliability of expert opinions. See, e.g., United Fire & Cas. Co. v. Whirlpool Corp., 704 F.3d 1338, 1341 (11th Cir. 2013); Fireman's Fund Ins. Co. v. Canon U.S.A., Inc., 394 F.3d 1054, 1057 (8th Cir. 2005); Tunnell v. Ford Motor Co., 330 F. Supp. 2d 731, 734 (W.D. Va. 2004). “NFPA 921 is authoritative in the fire investigation industry and NFPA 921 is the national guide for standards in fire investigations.” Layton v. Whirlpool Corp., No. CIV.A. 3:05-0473, 2007 WL 4792438, at *3 (S.D.W. Va. Feb. 9, 2007) (citing Canon U.S.A., 394 F.3d at 1057-58 and Travelers Indem. Co. v. Indus. Paper & Packaging Corp., No. 3:02-CV-491, 2006 WL 1788967, at *4 (E.D. Tenn. 2006)). As such, the court will apply NFPA 921 to determine whether the opinions of plaintiffs’ experts are sufficiently reliable under Rule 702.

While the court is obligated to examine an expert’s principles and methods, as well as the application of those methods to the particular facts of a case, the court should not attempt to determine the correctness of the conclusions reached. Pugh, 361 F. App’x at 452 (citing Moreland, 437 F.3d at 431). Instead, the court’s duty is to ensure that an expert employs ““the same level of intellectual rigor that characterizes the practice of an expert’ in the field of fire investigation.” Fireman's Fund Ins. Co. v. Tecumseh Products Co., 767 F. Supp. 2d 549, 556 (D. Md. 2011) (quoting Kumho Tire, 526 U.S. at 152).

Here, plaintiffs have designated two cause and origin experts: Patrick J. McGinley and Martin Schloss. McGinley is a former firefighter and a professional fire cause and origin expert. Schloss is an engineer who specializes in industrial baghouse design.

A. Cause

Both McGinley and Schloss conclude in their expert reports that the explosion at the Federal-Mogul plant was caused by an exothermic reaction in the baghouse. An exothermic reaction generates heat; it can occur when aluminum dust and water interact. Specifically, McGinley states in his expert report that “the most probable cause of the event was an exothermic aluminum dust/water combination which led to a heat buildup within the non-operating bag house and ignition of the airborne particulate that exploded within the bag house itself.” (McGinley Report, Dkt. No. 83-2, at 7). Schloss states in his expert report that he “can identify the most likely ignition sources [sic] as exothermic heating of the fine combustible aluminum dust in the baghouse.” (Schloss Report, Dkt. No. 83-3, at 32).

It is clear that neither McGinley nor Schloss utilized a sufficiently reliable methodology to render such a cause opinion. First, courts have “required experts to demonstrate that objects and materials are capable of behaving in the manner they hypothesize under the conditions of the event in question.” Tecumseh Products, 767 F. Supp. 2d at 555 (citing Higginbotham v. KCS Int'l, Inc., 85 F. App'x 911, 916 (4th Cir. 2004) (unpublished)). Neither McGinley nor Schloss meets this standard. Both experts provide no more than a broad overview of the general concept of an exothermic reaction: that it can result from a mixture of aluminum dust and water and that the result is heat. Neither provides a description of how the necessary quantities and/or proportions of those two elements combined in the baghouse at issue to produce sufficient heat to ignite the combustible aluminum dust particulates. A heat source is not equivalent to an

ignition source. An ignition source must generate sufficient heat to ignite the available fuel. A fire cause opinion that fails to establish a heat source capable of generating sufficient heat to serve as an ignition source is unreliable under Rule 702. See Truck Ins. Exch. v. MagneTek, Inc., 360 F.3d 1206, 1213 (10th Cir. 2004) (upholding the district court's exclusion of an expert opinion that a ballast caused a fire where the expert did not have "any evidence that the ballast could generate enough heat to ignite combustibles in the ceiling"); Tecumseh Products, 767 F. Supp. 2d at 555 (excluding an expert's opinion where the expert did not determine, *inter alia*, the ignition temperature of the fuel source he identified or how long the fuel source would have to be exposed to that temperature).

Instead, McGinley simply notes that a combustible dust explosion can result from an exothermic reaction under certain "ideal circumstances."⁶ Yet McGinley expressly admits in his deposition testimony that he cannot say what the "ideal circumstances" necessary for an exothermic reaction inside the baghouse would be.

Q: [A]s you sit here now, within your opinions you can't say what the ideal circumstances are for the [] bag house and the aluminum dust particulates that were present in it on December 31, 2010; is that correct?

A: Other than to say that it was reached and an explosion occurred, sir, that's correct, sir.

Q: . . . because an explosion occurred, then you're saying those conditions must have been met in this case?

A: Absolutely.

(McGinley Dep., Dkt. No. 107-13, 167:6-18). It is plainly insufficient for McGinley to conclude that the elements necessary for an exothermic reaction were presented in the baghouse based merely on the fact an explosion occurred. This is precisely the sort of fire cause opinion

⁶ McGinley also does not make clear whether his theory involves ignition of a dust cloud, or of the hydrogen gas that would result as a byproduct of an exothermic reaction. (See McGinley Dep., Dkt. No. 107-13, at 86:4-17).

methodology rejected by the court in Pride v. BIC Corp., 54 F. Supp. 2d 757 (E.D. Tenn. 1998), aff'd, 218 F.3d 566 (6th Cir. 2000). In Pride, plaintiffs alleged that a fire which originated in the left shirt pocket of plaintiff's deceased husband was caused by a defect in a BIC lighter. The court rejected the cause opinion of plaintiff's experts, finding that their opinions were not "not supported by any methodology." Id. at 762. "Rather, [their cause] opinion[s] appear[ed] to be based on the conclusion that the lighter was the only source of ignition in the area and therefore that a *defect* in the lighter must have caused the fire." Id. (emphasis in original). "[T]he jury," the court concluded, "would not be aided by the unverified speculations of the plaintiff's experts." Id. The Sixth Circuit affirmed the district court's decision to exclude the proffered expert testimony on the grounds it was insufficiently reliable. Pride v. BIC Corp., 218 F.3d 566 (6th Cir. 2000). The jury in this case would likewise not be aided by the speculative assertion that the circumstances necessary for an exothermic reaction were present in the baghouse when the experts cannot say what those circumstances might be.

Schloss also cannot establish that the conditions necessary for an exothermic reaction existed in the baghouse at the time of the event in question. While there is no question that aluminum dust was present, neither Schloss nor McGinley can establish that water was present in the baghouse. Both simply speculate that water might have been present through condensation – for example, a possible temperature differential inside the bag house and the outside environment – without offering any evidence that it was in fact present. Neither expert provides any witness accounts or physical evidence of the presence of condensation. Neither provides any models, calculations, or experimental testing to indicate that condensation would have been possible, let alone probable, under the conditions of the baghouse at the time of the explosion. In other words, plaintiffs' experts speculate that condensation was present and that such condensation

interacted with the aluminum dust to cause the baghouse to explode.⁷ Such speculation does not rise to the level of a reliable expert opinion as to the cause of a fire or explosion. See Tunnell v. Ford Motor Co., 330 F. Supp. 2d 731, 734 (W.D. Va. 2004) (excluding an expert's fire cause opinion where it was based on the speculative presence of high alcohol content liquor inside the vehicle at issue); see also Tyger Const. Co. Inc. v. Pensacola Const. Co., 29 F.3d 137, 142 (4th Cir. 1994) (citation omitted) ("An expert's opinion should be excluded when it is based on assumptions which are speculative and are not supported by the record."); Sparks v. Gilley Trucking Co., Inc., 992 F.2d 50, 54 (4th Cir. 1993) (citation omitted) ("[A] court may refuse to allow a generally qualified expert to testify if his factual assumptions are not supported by the evidence.").

Moreover, McGinley does not even fully stand by his cause opinion. During his deposition, McGinley repeatedly referred to an exothermic reaction as a "possibility." For example, he testified as follows:

Q: How have you tested your hypothesis that enough water or enough condensate accumulated to cause this explosion?

A: I didn't say that that specifically did cause the explosion. I said it's a possibility.

Q: But that's your opinion is that that's what happened, right?

A: It's my opinion that that's a possibility. . . . these events occur in bag houses and the initiating mechanisms, the initial mechanism the vast majority of time is never identified.

(McGinley Dep., Dkt. No. 107-13, at 98:7-20; see also id. at 79:12-13 ("I'm trying to give you what I believe are possibilities.")). Perhaps recognizing this hedging on the part of their expert,

⁷ Of some moment, both McGinley and Schloss do no more than speculate as to why the baghouse exploded due to an exothermic reaction on the day in question as opposed to the prior seven years the dust collection system had operated without incident. In short, the fundamental problem with plaintiffs' experts' opinions is that they dismiss the static electricity generated by the vacuuming operation as the source of the ignition of the aluminum dust without providing any credible alternative.

plaintiffs themselves have now disavowed an intention to rely on their experts' cause opinions. In their response in opposition to the defendants' motions to exclude, plaintiffs state that they intend, "with regard to the 'cause' issue, i.e. the ignition source within the baghouse, . . . [to] limit the presentation of the expert testimony to identify[ing] conditions existing in the baghouse at the time of the explosion that *might* have served as a source of ignition." (Br. in Opp'n re Mots. to Exclude Test. of McGinley and Schloss, Dkt. No. 102, at 2-3) (emphasis added). This retraction is consistent with the tentative nature of McGinley's and Schloss' opinions as to cause. At most, both experts state that an exothermic reaction can occur in a baghouse. But the fact that an exothermic reaction can occur under certain conditions is no substitute for evidence that an exothermic reaction did in fact happen here. An expert "must demonstrate not only that his hypothesis is plausible, but that *it*, and not some alternative hypothesis, best explains the event in question." Tecumseh Products, 767 F. Supp. 2d at 555 (emphasis in original) (citing Higginbotham v. KCS Int'l, Inc., 85 F. App'x 911, 916 (4th Cir. 2004) (unpublished)).

In light of the foregoing, the court is compelled to exclude the plaintiffs' experts' opinions that an exothermic reaction caused the baghouse to explode. Neither expert provided anything more than conjecture that conditions conducive to such a reaction were present. As such, their opinions as to cause do not survive Daubert scrutiny. The court must next address their opinions as to the origin of the explosion.

B. Origin

Although the speculative cause opinions of plaintiffs' experts cannot be admitted, plaintiffs argue that an inability to offer such opinions is not necessarily fatal to their case. Because their products liability claims are based on allegedly faulty safety devices (the damper and the venting capacity of the baghouse), and because the risk of explosions in baghouses is

well known, plaintiffs assert that the critical issue is the place of origin of the explosion, regardless of the cause.⁸ The court therefore turns to the reliability of McGinley's and Schloss' origin opinions.

As an initial matter, it must be noted that the term "origin opinion" can refer to two distinct concepts. First, there is "area of origin," which is defined as "a structure, part of a structure, or general geographic location within a fire scene in which the 'point of origin' is reasonably believed to be located." NFPA 921-17.1 Second, there is "point of origin," which is defined as "the smallest location a fire investigator can define, within an 'area of origin,' in which a heat source, source of oxygen, and a fuel interacted with each other and a fire or explosion began." Id. Because neither McGinley nor Schloss can reliably establish the interaction of a heat and fuel source capable of starting the explosion at issue, it is clear that they cannot give a point of origin opinion. Nevertheless, there remains the possibility that plaintiffs' experts can render a sufficiently reliable opinion as to area of origin. NFPA 921-17.2.1.3 ("Not identifying a point of origin will not necessarily preclude determining an origin and cause."); see also Bryte ex rel. Bryte v. Am. Household, Inc., 429 F.3d 469, 478 (4th Cir. 2005) (noting that an expert was able to identify the "area of origin" of a fire, not the "point of origin"). Thus, for the remainder of this opinion, the court will use the term "origin opinion" to refer to an opinion regarding the explosion's area of origin.

Notwithstanding defendants' arguments to the contrary, it does not automatically follow that an expert incapable of rendering a reliable cause opinion is likewise incapable of rendering a

⁸ Plaintiffs liken this case to one involving a defective airbag in a vehicle that strikes a tree. It matters not, they contend, why the vehicle struck the tree. What matters is that the airbag failed. In the same manner, plaintiffs argue that it does not matter why the fire and explosion started, what matters is that the baghouse was insufficiently vented resulting in its explosion and the damper did not keep the resultant fire from leaving the baghouse and travelling inside the plant via the ductwork to burn the plaintiffs. Although plaintiffs argue that they need not prove the reason for the fire and explosion, they acknowledge that they must prove that the conflagration started in the baghouse, rather than the ductwork. As will be seen, this is a burden they cannot meet.

reliable origin opinion. NFPA 921 clearly delineates “origin” and “cause” as distinct inquiries, addressing each in separate chapters (seventeen and eighteen, respectively). Indeed, determining the origin of a fire and/or explosion is generally a prerequisite for rendering a valid cause opinion. NFPA 921-18.1 (“Fire cause determination generally follows origin determination.”). Thus, it is inaccurate to characterize cause and origin opinions as mutually co-dependent. In fact, a cause opinion is usually dependent upon an origin opinion. Id. (“Generally, a fire cause determination can be considered reliable only if the origin has been correctly determined.”); see also id. at 17.1 (“Generally, if the origin cannot be determined, the cause cannot be determined, and generally, if the correct origin is not identified, the *subsequent* cause determination will also be incorrect (emphasis added)). Thus, it is certainly possible for a fire investigator to reach a valid origin opinion and then be unable to proceed further in the sequential process to establish cause. This fact was tacitly acknowledged in Tunnell v. Ford Motor Co., in which the court permitted the testimony of a fire origin expert while simultaneously excluding that expert’s speculative cause opinion. 330 F. Supp. 2d 731, 738-42 (W.D. Va. 2004); see also Dodson v. Ford Motor Co., No. C.A. PC 96-1331, 2006 WL 2405868, at *5 (R.I. Super. Aug. 17, 2006) (unpublished) (discussing NFPA 921) (“Not surprisingly, the methodologies used to determine ‘area of origin’ and ‘point of origin’ are different from those used to determine ‘cause.’ As a result, the methodologies used to determine ‘area of origin’ and ‘point of origin’ must be evaluated separately from those used to determine ‘cause.’”).

Although a cause opinion is not a requirement of an origin opinion, it is clear that the absence of a cause can substantially impact the reliability of an origin opinion. “The lack of a competent ignition source at the hypothesized origin should make th[at] hypothesis subject to increased scrutiny.” NFPA 921-17.6.1.1. An origin opinion lacking a cause is even more

problematic where, as here, there is a clearly established source of ignition – static electricity – elsewhere. “[T]he investigator who eliminates a potential ignition source because it is ‘not in the area of the hypothesized origin,’ needs to be especially diligent in testing the origin hypothesis and in considering alternate hypotheses.” NFPA 921-17.6.1.1. In their expert reports and deposition testimony, both McGinley and Schloss readily admit that the static electricity from the ungrounded industrial vacuum and PVC pipe used by the plaintiffs is a possible source of ignition. Both have dismissed it as the cause of the explosion because it is not within their hypothesized area of origin. Yet neither McGinley nor Schloss demonstrated the special diligence called for by NFPA 921-17.6.1.1.

McGinley and Schloss reject static electricity in the ductwork as the cause of the ignition of the aluminum dust resulting in the fire and explosion based primarily on two factors: (1) the eyewitness account of one of the plaintiffs, Jeffrey Hodges, and (2) video footage captured by a security camera inside the plant. McGinley also gives the opinion that, had the explosion initiated in the ducts inside the plant, the ductwork would have been “substantially different” in that there would have been “substantial deformation.” (McGinley Report, Dkt. No. 83-2, at 6). Specifically, McGinley states that “most probably [the explosion] would have caused [the ductwork] to separate at the seams resulting in a much more physically damaged configuration than was experienced in this event.” Id. Schloss, for his part, asserts that the ductwork is a less ideal environment for creating an aluminum dust cloud than the baghouse. He asserts that this is so because of the limited space for such a cloud to form in ductwork and because the smaller, more volatile dust particles would not have stayed in the ductwork, but instead traveled to the baghouse. (Schloss Report, Dkt. No. 83-3, at 32-33). As will be demonstrated, these opinions

are not supported by a sufficiently reliable methodology for rejecting static electricity caused by the plaintiffs' ungrounded vacuuming as the cause of the fire and explosion at issue in this case.

(i) Testing

"Testing . . . is often a key component of the Daubert inquiry, and the failure to properly test a hypothesis is often grounds for excluding expert testimony in this jurisdiction." Fireman's Fund Ins. Co. v. Tecumseh Products Co., 767 F. Supp. 2d 549, 554-55 (D. Md. 2011) (citing Marsh v. W.R. Grace & Co., 80 Fed. Appx. 883 (4th Cir. 2003) (unpublished) and Tunnell v. Ford Motor Co., 245 Fed. Appx. 283, 287 (4th Cir. 2007) (per curiam)). Nevertheless, neither Daubert nor NFPA 921 has a strict physical testing requirement. Layton v. Whirlpool Corp., CIV.A. 3:05-0473, 2007 WL 4792438, at *3 (S.D.W. Va. Feb. 9, 2007) (citing Travelers Indem. Co. v. Indus. Paper & Packaging Corp., No. 3:02-CV-491, 2006 WL 1788967, at *4 (E.D. Tenn. 2006) ("[E]xpert testimony has been held to be consistent with NFPA 921 and satisfy Daubert without independent testing.")).

Courts have been somewhat imprecise in their usage of the term "testing" in the context of expert opinion reliability. As a result, an initial review of the case law on the subject indicates some tension among authorities. Compare Kingsley v. Brenda & Gene Lummus, Inc., 1:11CV32, 2012 WL 727091, at *7 (W.D.N.C. Mar. 6, 2012) (quoting Tunnell v. Ford Motor Co., 330 F. Supp. 2d 707, 725 (W.D. Va. 2004)) (noting Daubert "does not require an expert to perform testing before his opinion is admissible."); *id.* ("[L]ack of testing may be relevant to the weight attributed to [an expert's] opinions, it does not render his opinions inadmissible *per se* under Daubert."); Main St. Am. Grp. v. Sears, Roebuck, & Co., CIV JFM-08-3292, 2010 WL 956178, at *5 (D. Md. Mar. 11, 2010) ("Case law is clear that testing is not a requirement for admissibility under Daubert and the Federal Rules of Evidence."), with Tecumseh Products Co.,

767 F. Supp. 2d at 555 (excluding an expert opinion where the expert “never tested his hypothesis, as both courts and NFPA 921 emphatically require”); *id.* (citations omitted) (“Exactly how rigorous such [] test[ing] would need to be to meet Daubert’s threshold of reliability is not at issue in this case; it is a sufficient basis for excluding [the expert’s] testimony to observe that he performed no testing *at all.*” (emphasis in original)).

In attempting to resolve this tension, the court notes that any rigid testing requirement would be incompatible with the flexible nature of the Daubert inquiry. See Oglesby v. Gen. Motors Corp., 190 F.3d 244, 250 (4th Cir. 1999) (citing Daubert, 509 U.S. at 593-94) (“Reliability of specialized knowledge and methods for applying it to various circumstances *may* be indicated by testing But at bottom, the court’s evaluation is always a flexible one[.]” (emphasis added)). Nevertheless, it seems clear that the absence of physical testing or modeling in an expert’s methodology can impact the reliability of that expert’s opinion. The Fourth Circuit has repeatedly upheld district court decisions excluding expert opinions as unreliable due to a lack of testing. See Marsh v. W.R. Grace & Co., 80 F. App’x 883, 886 (4th Cir. 2003) (unpublished) (internal citations omitted) (“Daubert first suggests that [courts] should evaluate whether an expert’s opinion is subject to testing The record supports the district court’s decision that [the proffered expert’s] opinion is unreliable because it cannot be tested or verified consistently, and therefore, the court did not abuse its discretion.”); Oglesby, 190 F.3d at 250 (affirming the district court exclusion of an expert’s opinion that a particular device was defective where the expert “did not test it” and “did not apply any calculations”).⁹ It is likewise clear that NFPA 921 recognizes both modeling and experimental testing as tools which can be utilized to help determine fire origin. See NFPA 921-17.6.2.2 (Fire Modeling); *id.* at 17.6.2.3

⁹ Similarly, in Pride v. BIC Corp., 218 F.3d 566 (6th Cir. 2000), in upholding the district court’s exclusion of an expert the Sixth Circuit noted that the proffered expert “did not do any testing,” but gave an opinion “based on the reports, depositions, pictures and other records he reviewed.” *Id.* at 572, 578.

(Experimental Testing). Under the particular facts of this case, the lack of physical testing, calculations, or modeling undercuts the reliability of plaintiffs' experts' origin opinions.

In determining that the ductwork would have appeared "different" due to over pressurization had the ignition initiated within it, McGinley did not perform tests of similar ductwork to determine how it would respond to such an ignition event. Nor did he perform any modeling or calculations to determine how much pressure would be needed to cause the deformity he believes would have resulted. Instead, he simply relies on the fact that he has observed many fire/explosion scenes over his long career as a fire cause and origin expert and, previously, as a firefighter and fire investigator. Such experiential expert testimony is not per se unreliable. "The Fourth Circuit has acknowledged that, although experiential expert testimony does not rely on anything like a scientific method, such testimony is admissible under Rule 702 so long as an experiential witness explains how his experience leads to the conclusion reached, why his experience is a sufficient basis for the opinion, and how his experience is reliably applied to the facts." The Harvester, Inc. v. Rule Joy Trammell Rubio, LLC, No. 3:09-CV-358, 2010 WL 2653373, at *2 (E.D. Va. July 2, 2010) (internal quotation marks and alternations omitted) (quoting from United States v. Bynum, 604 F.3d 161, 167 (4th Cir. 2010)). But simply noting his history of past observations is insufficient to explain how McGinley arrived at his conclusion here. McGinley simply states he would expect the ductwork to have been deformed due to over pressurization. This conclusory statement is readily distinguishable from reliable experiential expert witness testimony. Cf. Bynum, 604 F.3d at 167-68 (affirming the admission of expert testimony as to the authenticity of images of child pornography where the expert "testified as to exactly the steps he takes in determining the authenticity of images under the approved FBI 'checklist,' including ascertaining an image's resolution and focus, examining its

sharpness and depth, comparing it to images in the FBI database, and identifying in the image certain human characteristics – like skin, teeth, ears, and hair – that are difficult to recreate by computer”).

McGinley’s untested conclusion that the ductwork would have been deformed by the ignition of aluminum dust within it is analogous to the expert opinion at issue in Oglesby v. General Motors Corp. In Oglesby, the Fourth Circuit upheld the exclusion of an expert who sought to testify that the spontaneous detachment of a radiator hose was caused by a defect in a plastic inlet connector piece. 190 F.3d at 247. Similar to McGinley’s investigation here, “[i]n preparing to render his expert opinion, [the expert in Oglesby] looked at the broken plastic connector and the piece which broke off, took physical measurements of the connector, and photographed the parts.” Id.¹⁰ This constituted the entirety of the expert’s investigation; he did not perform any tests or calculations to determine the strength of the part or the stresses to which it was subjected. Id. at 247-48. The Fourth Circuit observed that:

Under generally known engineering principles, stress applied in a given amount in a particular direction would theoretically cause a plastic part to reshape itself, if hot enough, or to break. To conclude, however, that a particular stress caused a particular plastic part to reshape itself or to break, the engineer would have to know the amount of the particular stress and the stress resistance of the part at various temperatures in order to ascertain that the particular stress overcame the stress resistance of the part. [The proffered expert] conceded, however, that he had none of the necessary data and therefore could not make any such calculations for the part in this case. . . .

The district court recognized this flaw, concluding that [proffered expert] opinion lacked “any probative value” because it lacked “the reliability, foundation and relevance necessary for admissibility” under Federal Rule of Evidence 702.

¹⁰ It does not appear that McGinley took any measurements during the course of his fire investigation in this case. (McGinley Dep., Dkt. No. 107-13, at 27:14-17).

Id. Similarly here, generally known principles of physics make clear that over pressurization events can cause deformities. Yet to conclude that a particular event would cause a given level of deformity (or any deformity) requires knowledge of the particular stress generated and the stress resistance of the substance at issue. McGinley provides neither.

As for Schloss, his opinion that the ductwork is a less ideal environment for creating an aluminum dust cloud than the baghouse does not establish that a dust cloud did not or could not form in the ductwork. Nor does he provide any measurements, calculations, or physical testing to show the relative likelihood of dust cloud formation inside the baghouse versus inside the ductwork. His bald assertion that the baghouse provided superior conditions for dust cloud formation is insufficient. “[N]othing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997).

(ii) Eyewitness Account

Plaintiffs experts, like plaintiffs themselves, rely heavily on the testimony of plaintiff Hodges. Hodges’ testimony regarding what he saw of the explosion is as follows:

I was standing with my left hand leaning on the pipe with the flashlight in my hand and looking through the duct as to what we were vacuuming.

Looking through the pipe, you know, I could see the 3 to 5 inches of dust. It kind of varied through it all and went all the way back to outside the building where there was a turn or something in the duct. You could see past that.

There was a damper or backsplash or whatever they come up with for the name of this thing. That was in the pipe and it was open because of the material that was in the pipe holding it open. I could see past that and into a curve in the pipe which went into the baghouse.

I was standing there and at that time from that end, from the baghouse end and past the damper, there was a flash of a fireball and the next thing I know I'm on fire.

(Hodges Dep., Dkt. No. 107-8, at 40:2-17). Hodges also specifically testified as to configuration of what he apparently believed to be the damper.

Q: Was it a flap with a hinge at the top?

A: I don't know. I know that I could see the flapper that was in there and to me it looked like it pivoted from the center, but I don't know.

Q: That's what I'm trying to find. Where you saw that could you see a gap on the side, the top, or the bottom?

A: I could see over the top of it from the center up.

(Id. at 101:1-9). However, due to the actual configuration of the damper, this description is physically impossible. There is no dispute of fact that the damper was hinged at the top. (See Schloss Dep. Ex. 5, Dkt. No. 107-17, at 286).¹¹ As such, there is no possible way Hodges could have seen over the top of it to the portion of the ductwork beyond. Neither the fact that Hodges admitted that he was unsure how the damper hinged, nor his insistence that he did, in fact, see past the damper, (Hodges Dep., Dkt. No. 107-8, at 40:16; id. at 75:11-13), alters this simple fact. Whatever it was Hodges saw, he saw "over the top of it from the center up" – therefore to conclude Hodges was in fact seeing past the damper is to ignore the damper's undisputed configuration. Consequently, Hodges' testimony that he observed the explosion traveling from beyond the damper cannot be a valid basis on which to conclude that the origin of the explosion was inside the baghouse located on the far side of the damper from Hodges.

During his deposition, McGinley labored at length to explain how Hodges could have nevertheless seen past the damper. He posits that the "geometry" of the dust in the ductwork

¹¹ In layperson's terms, the damper resembles a large, metal toilet seat, oriented vertically with the hinge on top, the outside of the seat facing the baghouse and the inside of the seat facing the ductwork leading into the plant.

could have been an “EKG”-like pattern, such that it accumulated more on one side of the duct than the other, thus allowing the non-translucent dust to prop open the damper while simultaneously allowing Hodges to see past it. (See McGinley Dep., Dkt. No. 107-13, at 66:17-67:20; id. at 68:8-69:17). Hodges, however, clearly testified that he saw over – not to the side – of the damper. Thus, McGinley’s creative hypothesis is not consistent with Hodges’ testimony. Moreover, McGinley’s repeated references to the accuracy of Hodges’ description of the ductwork’s configuration on the far side of the damper does not change the fact that Hodges could not have seen over the top of the damper. Nor is Hodges’ description of the ductwork on the far side of the damper, which simply continued on before making an approximately ninety degree turn into the baghouse, particularly probative. The exterior ductwork was exposed and in plain view outside the plant and it is no great mystery as to how it was configured past the damper. In sum, McGinley has failed to explain how Hodges could have possibly seen over the top of the damper as Hodges testified that he did. While NFPA 921 recognizes witness statements as an important source of data, “[w]hen witness statements are not supported by the investigator’s interpretation of the physical evidence, the investigator should evaluate each separately.” NFPA 921-17.3.3.15.

Because Hodges’ testimony that he could see over the top of the damper is physically impossible, we are left with his testimony that he saw a flash of a fireball in the ductwork. In this regard, Hodges’ testimony is similar to that of a Mrs. Miller in the case of Bryte ex rel. Bryte v. Am. Household, Inc., 429 F.3d 469 (4th Cir. 2005). In the Bryte case, the Fourth Circuit upheld the exclusion of a fire cause expert where that expert eliminated a possible cause of a deadly house fire, a candle, based on the observations of Mrs. Miller. The expert excluded the candle because Mrs. Miller observed it still lit and upright after the outbreak of the fire. The

Fourth Circuit explained that the expert's opinion was flawed not because of his "reliance on Mrs. Miller's observations, but because the fact that she saw the lighted candle on the table in itself cannot exclude it as a cause of the fire . . ." Id. at 477. The Fourth Circuit noted that the candle nevertheless could have started the fire by setting a nearby lampshade or blanket alight, id., and concluded that

Daubert aims to prevent expert speculation, and our review of the record convinces us that [the proffered expert's] failure to independently evaluate the open flame in the room cannot be reconciled with the reliability mandate. [The expert] was permitted to rely on what Mrs. Miller saw, but not on her conclusions about the cause of the fire. As to the candle he essentially did the latter.

Id. By accepting Hodges' physically impossible testimony, McGinley and Schloss commit the same error here, rubber stamping Hodges' conclusion as to the origin of the fireball. This is not a conclusion based on scientific methodology, it is advocacy.

(iii) Video Footage

A security camera was operating inside the plant at the time of the fire and explosion of the baghouse. The resultant video footage does not, however, directly capture the event. It does not depict the baghouse, the ductwork, or plaintiffs as they are vacuuming. Instead, the video depicts a doorway into the plant some distance both from where plaintiffs were working and the baghouse. No activity is seen on screen until there is a sudden flash of white light, followed by a faint orange glow. In the aftermath, persons can be seen entering and exiting the building as part of the rescue efforts following the fire and explosion. However, nothing more of the accident can be seen. (See generally, Dkt. No. 78-29).

Neither McGinley nor Schloss provide any detailed analysis in their original expert reports as to what is depicted in the video. McGinley's original expert report asserts that footage

“clearly shows the initial flash of light and blast occurring outside the building exterior wall, not inside.” (McGinley Report, Dkt. No. 83-2, at 5). He provides zero explanation of how he reached this conclusion. Schloss’ original expert report is somewhat more methodologically sound, as it at least attempts to describe how he analyzed the video footage. Schloss concludes that the flash in the first frame of the explosion occurs on the “right side of the frame.” (Schloss Report, Dkt. No. 83-3, at 31). The court has reviewed the video as well as the multiple submissions by the parties with various frame-by-frame screen shots. There is nothing self-evident about either the video as a whole or the first frame of the explosion to support the assertions made by plaintiffs’ experts. That is, it is not clearly shown in the video that the initial flash of light and blast occurred outside, as opposed to inside, and it likewise not clear that the flash in the first frame appears on the right side of the screen. In place of analysis, plaintiffs’ experts simply state conclusions about what the video depicts. In order to accept their claims as to the video’s content, the court would have to rely on the “*ipse dixit* of the expert[s],” a rejected practice. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997); see also Kipperman v. Onex Corp., 411 B.R. 805, 844 (N.D. Ga. 2009) (internal quotations and alterations omitted) (“The trial court’s gatekeeping function requires more than simply ‘taking the expert’s word for it.’ An expert must be able to explain step by step how and why he reached his given conclusions.”).¹²

McGinley and Schloss have attempted to rehabilitate their reliance on the video footage, both in their responses to deposition questions and via affidavits in response to the frame-by-frame analysis provided by the defendants’ expert witness report. In their affidavits, both plaintiffs’ experts reach the same conclusion: that the most significant event in the video – the initial whiteout – must correspond to the most significant event that occurred at the plant that day

¹² Indeed, an *ipse dixit* assertion does not even meet the requirements of Rule 26(a)(2). See Fed. R. Civ. P. 26(a)(2)(B)(i) (requiring that an expert report contain “the basis and reasons” for an expert’s opinions).

– the baghouse exploding. (McGinley Aff., Dkt. No. 107-15, at 4; Schloss Aff., Dkt. No. 107-19, at 3). Thus, they posit, because the whiteout comes first in the video, the baghouse must have exploded first. This is not science, this is argument. The simple fact is that the video is, at best, inclusive. In and of itself, the video cannot provide the basis for an expert opinion that the explosion and fire originated in the baghouse. In short, the video evidence cannot cure the other deficiencies in plaintiffs' experts' origin opinion methodology. “[A]ny step that renders the analysis unreliable . . . renders the expert's testimony inadmissible.” Nucor Corp. v. Bell, C/A 206-CV-02972-DCN, 2008 WL 4442571, at *13 (D.S.C. Jan. 11, 2008) (quoting In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 745 (3d Cir. 1994)).

(iv) Conclusion

The reliability of an expert's opinion depends on many factors. The precise nature of the factors relevant to the Rule 702 inquiry will vary with both the nature of the opinion rendered and the context in which it is offered. Here, the court must ensure that the proffered fire origin experts display “the same level of intellectual rigor that characterizes the practice of an expert” in the field of fire investigation.” Fireman's Fund Ins. Co. v. Tecumseh Products Co., 767 F. Supp. 2d 549, 556 (D. Md. 2011) (quoting Kumho Tire, 526 U.S. at 152). As set forth above, a confluence of multiple factors – the lack of a reliably established ignition source in the baghouse; the undisputed presence of static electricity in the ductwork; the absence of physical testing, modeling, or calculations; and undue reliance on physically impossible elements of an eyewitness account – serves to undercut the reliability of plaintiffs' experts' opinions. In particular, McGinley and Schloss did not exercise the heightened rigor required by NFPA 921-17.6.1.1 in discounting the undisputed presence of static electricity in the ductwork as the origin

of the fire and explosion. As such, the origin opinions offered by McGinley and Schloss are not sufficiently reliable to be admissible under Rule 702.

III.

Plaintiffs argue that even if their experts are excluded, summary judgment is not warranted because they have competent lay testimony upon which a jury could rely in concluding that the fire and explosion originated in the baghouse and that their injuries resulted from the improper venting of the baghouse and damper's failure to prevent the fire from entering the plant's interior. The court cannot agree.

Under Federal Rule of Civil Procedure 56(a), the court "shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986); Glynn v. EDO Corp., 710 F.3d 209, 213 (4th Cir. 2013). When making this determination, the court should consider "the pleadings, depositions, answers to interrogatories, and admissions on file, together with . . . [any] affidavits" filed by the parties. Celotex, 477 U.S. at 322. Whether a fact is material depends on the relevant substantive law. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). "Only disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment. Factual disputes that are irrelevant or unnecessary will not be counted." Id. (citation omitted). The moving party bears the initial burden of demonstrating the absence of a genuine issue of material fact. Celotex, 477 U.S. at 323. If that burden has been met, the non-moving party must then come forward and establish the specific material facts in dispute to survive summary judgment. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586–87 (1986).

In determining whether a genuine issue of material fact exists, the court views the facts and draw all reasonable inferences in the light most favorable to the non-moving party. Glynn, 710 F.3d at 213 (citing Bonds v. Leavitt, 629 F.3d 369, 380 (4th Cir. 2011)). “Credibility determinations, the weighing of the evidence, and the drawing of legitimate inferences from the facts are jury functions, not those of a judge” Anderson, 477 U.S. at 255. However, the non-moving party “must set forth specific facts that go beyond the ‘mere existence of a scintilla of evidence.’” Glynn, 710 F.3d at 213 (quoting Anderson, 477 U.S. at 252). Instead, the non-moving party must show that “there is sufficient evidence favoring the non[-] moving party for a jury to return a verdict for that party.” Res. Bankshares Corp. v. St. Paul Mercury Ins. Co., 407 F.3d 631, 635 (4th Cir. 2005) (quoting Anderson, 477 U.S. at 249).

Although it is Virginia law that governs the substance of plaintiffs’ claims, “whether there is sufficient evidence to create a jury issue of those essential substantive elements of the action, as defined by state law, is controlled by federal rules.” See, e.g., Jones v. JC Penney Corp., Inc., 6:12-CV-00010, 2013 WL 625720, at *3 n.4 (W.D. Va. Feb. 20, 2013) (quoting Fitzgerald v. Manning, 679 F.2d 341, 346 (4th Cir. 1982)); Smith v. Gen. Motors Corp., 376 F. Supp. 2d 664, 676 (W.D. Va. 2005) (quoting the same passage from Fitzgerald), aff’d sub nom. Estate of Smith v. Gen. Motors Corp., 179 F. App’x 890 (4th Cir. 2006).

In order to prove their products liability claims, plaintiffs must show that their injuries are related to a failure of the baghouse to properly vent the explosion or the damper to contain it. As such, they readily concede that if they fail to prove that the fire originated on the far side of the damper, they have no actionable products liability claim. Plaintiffs point to four pieces of evidence which they say, even in absence of expert testimony, create a colorable issue of fact for a jury: (1) the testimony of Hodges; (2) the testimony of another plaintiff, John Paul Spangler,

(3) the video footage from the security camera, and (4) the lack of deformity in the ductwork post-ignition. Reviewing not only this evidence, but the record as a whole, the court finds that, viewing the evidence in the light most favorable to the plaintiffs, no reasonable jury could find in their favor as to their products liability claims.

First, as previously discussed, Hodges' testimony that he saw over the top of the damper is impossible. There is no dispute of fact as to the configuration of the damper, which was hinged at the top. Hodges was clearly mistaken when testifying he saw over the top of it. Hodges' physically impossible testimony does not create an issue of fact for the jury. It is proper to discount a plaintiff's testimony for purposes of summary judgment when "it is blatantly contradicted by the record, blatantly inconsistent, or incredible as a matter of law, meaning that it relates to facts that could not have possibly been observed or events that are contrary to the laws of nature." Feliciano v. City of Miami Beach, 707 F.3d 1244, 1253 (11th Cir. 2013) (collecting authorities). Here, Hodges' testimony that he saw over the top of the damper "could not have possibly been observed" due to the damper's configuration. As such, Hodges' testimony does not provide any basis for a jury to do anything but speculate that the ignition originated in the baghouse and that the baghouse and damper subsequently failed to protect him. In short, it provides no support to plaintiffs' argument that a defect in the baghouse or damper caused their injuries.

As to Spangler's testimony, plaintiffs contend that his observations regarding the event provide further lay evidence of ignition in the baghouse. Specifically, plaintiffs point to Spangler's comments indicating that, when the explosion occurred, he was about to open a door leading to the plant's exterior when he observed a bright light "from the front." Spangler's exact deposition testimony on this point is as follows:

A: . . . So when I turned around is when the explosion occurred. I was walking toward the door, almost at the door.

Q: And you heard two explosions; is that correct?

A: I heard one explosion. Well the first one – it all happened so fast – it was the bright white light just came at me from the front and blasted me pretty good and I don’t know if I lost consciousness or not, but the next thing I remember is just vaguely looking around and everything was going in really slow motion.

(Spangler Dep., Dkt. No. 107-10, at 40:22-41:10). Spangler reiterated his orientation later in his deposition.

Q: When that first bright light came, you said you come back in, you were facing towards where Mr. Hodges –

A: No, sir; I was facing the door getting ready to go out the door. It was propped by the six-inch aluminum hose that we used to vacuum was coming through the bottom of the door.

(Id. at 42:15-22). Spangler’s testimony does not remedy the fatal failure of proof in plaintiffs’ case. To be sure, Spangler describes a flash of white light and disorienting explosion. But what his testimony does not do is provide the source for the ignition of the fire and explosion. There is no dispute in this case that plaintiffs were burned inside the plant by fire emanating from the ductwork they were vacuuming and that the outside baghouse exploded. Spangler’s testimony does nothing to assist the jury in deciding whether the claimed defects in the baghouse and damper played any role in the injuries he and his co-workers sustained. In that regard, Spangler’s testimony is just as inconclusive as the video footage and provides no clue as to how and where the fire and explosion began and, critically, whether the claimed defects of the damper and baghouse caused plaintiffs’ injuries.¹³

¹³ Spangler also testified that the burns he received from the accident primarily “hit [him] in the face and went back,” although he received additional burns on the back of his head from falling debris; he could not, however, recall being hit by a blast of air from any particular direction. (See Spangler Dep., Dkt. No. 107-10, at 95:24-96:14). Moreover, he first noticed that he was on fire – his hair burning – when he saw Danny Collins (a non-plaintiff

As to the video, the court has already noted that the assertions made by plaintiffs' proffered experts that it "clearly" shows the explosion first occurring outside the plant to be without basis. The video does not show the baghouse, the ductwork, or the plaintiffs. In sum, it does not directly depict the events in question. As with Spangler's testimony, there is simply no way for a jury to reach any conclusion as to the ignition of the fire and explosion from watching the video except by conjecture, guess, or random judgment.

Finally, plaintiffs asserted at oral argument that the jurors themselves can look at the ductwork and see for themselves that the fire did not begin there. As noted previously, McGinley did not provide a sufficiently reliable foundation for his opinion that ignition of the aluminum dust in the ductwork would have resulted in its physical deformation. To allow the jury to reach this conclusion invites utter speculation.

In light of the foregoing, it is clear that, without reliable expert testimony, plaintiffs cannot produce sufficient evidence upon which a jury could conclude that the ignition of the aluminum dust took place in the baghouse and that the damper and an insufficiently vented baghouse failed to protect the plaintiffs. At most, plaintiffs' evidence, taken together and viewed in the light most favorable to them, leaves the jury completely at sea as to cause and origin of the fire and explosion in this case. As was true in Logan v. Montgomery Ward & Co., Inc., 216 Va. 425, 429, 219 S.E.2d 685, 688 (1975), the "evidence in the instant case fails to eliminate the possibility that the blame attaches to some party other than [the defendants]. Neither is the proof such that the existence of a defect in the [baghouse and/or damper] is the only reasonable inference that can be drawn to explain the explosion." In short, this is "the case of an

employee of LCM Corp.) running towards the scissor lift upon which Hodges and Bonds were standing to vacuum. (Id. at 41:11-14). In sum, Spangler did not give any testimony indicating that he caught fire from an explosion originating outside as opposed to inside the plant. Thus, this testimony likewise does not provide any basis for concluding the fire originated in the baghouse versus the ductwork, or the interior of the plant versus the exterior.

unexplained accident which may have been attributable to one of several causes, for some of which the defendant[s are] not responsible.” Id. For more than a century, it has been well established in Virginia¹⁴ that:

Where damages are claimed for injures which may have resulted from one of two causes, for one of which the defendant is responsible and the other of which it is not responsible, the plaintiff must fail if his evidence does not show that the damage was produced by the former cause. And he must also fail if it is just as probable that the damages were caused by the one as by the other, since the plaintiff is bound to make out his case by the preponderance of the evidence.

Norfolk & W. Ry. Co. v. Poole’s Adm’r, 100 Va. 148, 40 S.E. 627, 629 (1902). There is in this case simply no proof of a defect in the baghouse or damper that caused plaintiff’s injuries beyond the realm of “conjecture, guess, or random judgment upon mere supposition.” Chesapeake & O. Ry. Co. v. Whitlow, 104 Va. 90, 51 S.E. 182, 184 (1905). As such, the court is required to grant summary judgment on the products liability claims.

IV.

Having determined that there is insufficient evidence giving rise to a genuine issue of material fact as to the origin of the fire and explosion, and thus no evidence that a product defect caused or contributed to plaintiffs’ injuries, the court must address one further issue. Plaintiffs acknowledge that summary judgment is appropriate for Carrington, Dustex, and Kirk & Blum if there is no jury issue as to origination. The same is true for the products liability claim against Federal-Mogul. However, plaintiffs contend that their negligence claim against Federal-Mogul

¹⁴ As previous noted, in diversity cases “whether there is sufficient evidence to create a jury issue of th[e] essential substantive elements of [an] action, as defined by state law, is controlled by federal rules.” Fitzgerald v. Manning, 679 F.2d 341, 346 (4th Cir. 1982). However, it is well established that the burden of proof is substantive and therefore controlled by state law. See Shady Grove Orthopedic Associates, P.A. v. Allstate Ins. Co., 559 U.S. 393, 454 n.12 (2010) (so noting).

remains actionable as Federal-Mogul was aware of the explosive properties of aluminum dust and negligently failed to protect plaintiffs from those dangers.

Specifically, plaintiffs point to a dust explosion hazard assessment performed by Chilworth Technology in April 2010 following an explosion in a Federal-Mogul facility in Italy. Chilworth's assessment culminated in a report that included twelve suggestions and recommendations. (See Chilworth Dust Explosion Hazard Assessment, Dkt. No. 107-1, at 510-11). Plaintiffs contend that Federal-Mogul did not implement many of these recommendations prior to the explosion. However, even assuming the failure to implement all Chilworth recommendations was negligent, “[n]egligence and an accident . . . do not make a case. As between them there must be causal connection.” Hawkins v. Beecham, 168 Va. 553, 561, 191 S.E. 640, 643 (1937). Here, the suggestions and recommendations made by Chilworth as to the design of the baghouse or damper are not relevant, as plaintiffs cannot establish a triable issue of fact as to the origin of the fire and explosion. Plaintiffs nevertheless maintain that Federal-Mogul was negligent in failing to follow certain Chilworth recommendations, regardless of the ignition source of the conflagration. Specifically, plaintiffs assert that Federal-Mogul was negligent in its maintenance of the dust collection system, in particular by failing to empty the baghouse before plaintiffs performed their maintenance operation on the dust collection system. (Pls.’ Mem. in Opp’n to Federal-Mogul’s Mot. for Summ. J., Dkt. No. 104, at 22). The court disagrees.

It is well-settled that a federal court sitting in diversity looks to state law so that “litigation of state-based rights in federal court does not yield results materially different from those attained in the state courts.” Johnson v. Hugo’s Skateway, 974 F.2d 1408, 1416 (4th Cir.

1992) (citing *Erie R.R. Co. v. Tompkins*, 304 U.S. 64, 68 (1938)). Thus, Virginia law governs the substance of plaintiffs' negligence claims.

To establish a claim for negligence under Virginia law, the plaintiff must satisfy three elements: (1) "the identification of a legal duty of the defendant to the plaintiff;" (2) "a breach of that duty;" and (3) "injury to the plaintiff proximately caused by the breach." *Talley v. Danek Med., Inc.*, 179 F.3d 154, 157 (4th Cir.1999). "Under Virginia law, '[t]he standard of conduct to which a party must conform to avoid being negligent is that of a reasonable man under like circumstances.'" *Id.* at 157–58 (quoting *Moore v. Va. Transit Co.*, 50 S.E.2d 268, 271 (Va. 1948) (citation and internal quotation marks omitted)). Furthermore, "[d]uty is not an abstract concept but is always tied to a particular individual or class of persons to which an individual belongs. In determining whether a duty exists, the Court considers factors including foreseeability of harm, the likelihood of injury, the magnitude of the burden of guarding against that injury, and the consequences of placing such a burden on the defendant." *Jappell v. Am. Ass'n of Blood Banks*, 162 F.Supp.2d 476, 480 (E.D.Va.2001) (internal citations omitted).

Holland v. Chase Home Fin., LLC, 2:11CV223, 2011 WL 4025220, at *5 (E.D. Va. Sept. 9, 2011) (alterations in original). The seventh of the Chilworth suggestions and recommendations states that "[b]efore repairs or maintenance activities are conducted on dry-dust collectors, empty the collector and thoroughly remove accumulations." (Chilworth Dust Explosion Hazard Assessment, Dkt. No. 107-1, at 510). Plaintiffs ask that Federal-Mogul be held liable for negligence for not removing the aluminum dust from the baghouse before plaintiffs began their dust removal work. Yet the entire purpose of hiring the plaintiffs was to clean out the dangerous dust that had built up in the dust removal system. Federal-Mogul sought out experts in hazardous waste removal. LCM, a hazardous waste contractor, was hired to do the work, and it is undisputed that plaintiffs, employees of LCM, were trained and certified in hazardous waste removal.

The court finds as a matter of law Federal-Mogul acted reasonably in doing so. Indeed, it difficult to hypothesize a more reasonable response to the buildup of explosive aluminum dust than to hire hazardous waste removal experts to remove it.¹⁵ The court thus rejects the catch-22 logic that Federal-Mogul acted unreasonably by failing to empty the dust collection system before hiring plaintiffs to empty the dust collection system. Federal-Mogul could not have reasonably foreseen that trained and certified experts would have used an ungrounded vacuum with a PVC pipe attachment that generated static electricity to vacuum highly combustible aluminum dust. In order for Federal-Mogul to guard against this sort of accident, it would itself have to become an expert in hazardous waste removal, thus defeating the entire purpose of hiring third-party experts. This is not a case where Federal-Mogul created a ticking-time bomb and innocent bystanders simply had the misfortune of being in the wrong place at the wrong time. Plaintiffs were at the plant on the day of fire and explosion to remedy the potential for the very accident that occurred. Federal-Mogul cannot be liable for placing them in such a position.

Plaintiffs assert that they were unaware that they were vacuuming combustible aluminum dust, and therefore unaware of the risk of using an ungrounded vacuum. But the burden is clearly not the party hiring the hazardous waste removal experts to inform those experts how to do their jobs. Federal-Mogul was reasonable in assuming LCM and the plaintiffs, as hazardous waste removal experts, would determine both the substance they were dealing with and the proper method for removing it. Placing the burden on Federal-Mogul on either of those issues would defeat the purpose of hiring a third party expert.

¹⁵ Plaintiffs reliance on Jones v. Meat Packers Equip. Co., 723 F.2d 370 (4th Cir. 1983), is therefore misplaced. First, Jones is a contributory negligence case. The court does not need to reach the question of contributory negligence to conclude that Federal-Mogul acted reasonably and was therefore not negligent in its own actions. Second, the facts of Jones are clearly distinguishable. The plaintiff in Jones was engaged in routine cleaning of a machine when it started and injured her; she brought suit against the manufacturer of the machine. Id. at 371. Plaintiffs here have brought suit against a third-party that hired their employer, LCM, for the express purpose of remedying a potentially dangerous situation.

V.

The opinions offered by plaintiffs' experts lack a reliable foundation and are therefore inadmissible under Rule 702. In the absence of expert testimony, there is no genuine issue of material fact. Summary judgment for the defendants is therefore appropriate.

The clerk is directed to send a certified copy of this Memorandum Opinion to all counsel of record. An appropriate Order will be entered this day.

Entered: March 7, 2014

/s/ Michael F. Urbanski

Michael F. Urbanski
United States District Judge